# BOLLETIN Volume 30 - Number 45 / November 19, 1976 BROOKHAVEN NATIONAL LABORATORY

# From The People Point of View

The uncomfortable awareness of the environmental hazards brought about by the scientific and industrial revolutions of the last two centuries, including the risks of the thermonuclear war, has led to a broad debate on the position of technology in America's and indeed the world's future.

The issues in this debate are serious issues of personal and national values, life styles, and economic structures: "Must we think...[about] perpetual and unbridled growth – in wealth, energy consumption, production, profit – or is there another way?"

Energy has become an urgent issue in this debate; disputes about energy generation and use are part of this debate. The campaign against some ways of generating power, notably nuclear power and strip coal mining are creating organized political action, "one in which issues are sharply drawn between private and public interest, between property values and human values, between corporate power and individual freedoms" and between life styles and cultural values.

Blocking of the Kaiparowits power complex in southern Utah resulted from public opposition to damage of a hitherto altogether unspoiled area. Similar disputes have erupted in West Germany, France, and other West European countries. Nuclear power was a prominent political issue in the September, 1976, election in Sweden.

In the 141st Brookhaven Lecture "Power versus People: Cutting the Human Costs," Dr. Leonard D. Hamilton will outline the intent and scope of the activities of the Biomedical and Environmental Assessment Division on Wednesday, December 1, at 8 p.m. in Berkner Hall.

The Division's research is aimed at developing an accurate assessment of the long-range and widely diffused, as well as the conspicuous short-range and localized, biomedical and environmental effects of energy production and use. All forms of energy generation based on fossil fuel, hydro, nuclear and new technologies are assessed to develop as accurate an estimate as possible of their health and environmental costs. The assessment covers this totality including the public perception of efforts to estimate the real cost.

Improvement in the public perceptions of the true health costs will not necessarily reduce the attacks on power, but it might improve the quality of scepticism about such Nader statements on nuclear safety that: "The Titanic was supposed to be unsinkable. It sank"; a realization that, on many of these issues, the Friends of the Earth work out as support for Colonel



Qaddafi [Prime Minister of Libya]. For each form of energy a price has to be paid. Our task is to estimate this price, and show how this can be kept minimal, and spread as equitably as possible.

Since 1973 Dr. Hamilton has been head of the Biomedical and Environmental Assessment Group which this year became a division of the National Center for Analysis of Energy Systems. He joined the Laboratory in 1964 as head of the Microbiology Division in Medical and Attending Physician at the Medical Research Hospital.

Dr. Hamilton spent the prior 14 years at the Sloan-Kettering Institute for Cancer Research where his laboratory research centered on the molecular structure of the genetic material (DNA) and the cells in man concerned with the immune mechanism. He continued this research at Brookhaven. His interest in the risks of radiation for man began with his Ph.D. work in Cambridge, and since DNA and the immune system are prime targets of radiation damage has continued throughout his career. Since 1973 his group has been responsible to ERDA for the assessment of health effects from energy systems and of coordinating such assessments at national laboratories.

Dr. Hamilton received his Bachelor of Arts in 1943 and qualified in Medicine from Oxford University in 1945. He received the Doctor of Medicine degree from Oxford in 1951 and the Ph.D. in experimental pathology from Cambridge University in 1952.

A buffet supper will be served in the Brookhaven Center before the lecture beginning at 6:30 p.m. Reservations should be made in advance by calling Ext. 3541 before 5 p.m. Refreshments will be available in the lobby of Berkner Hall immediately after the lecture.

# Add Color & Flavor & Accelerate

Before packed audiences, Murray Gell-Mann, Nobel Laureate from Cal Tech, delivered two lectures last week as the Brookhaven Distinguished Lecturer in Physics for 1976.

In his first lecture, "What Are The Building Blocks of Matter?" Gell-Mann explained why, at last, we have a real candidate for a theory of the strong interactions.

He calls this theory Quantum Chromodynamics. The reason for the name is that the building blocks of matter, the quarks, must come in three distinct types and, by analogy to the three primary colors, they are called colored quarks. While these colors are essential to the description of matter, they can never be separated; all matter being white. Quarks will never be observed as particles but live only within the proton, pi-meson, etc.; color is a true hidden variable.

Although Gell-Mann is very optimistic that the correct theory is nearly at hand, he said that there are many difficult experimental and theoretical questions that must be answered before it is established. In his second lecture he went into many of these questions in some detail.

He also discussed the nature of even grander theories, unifying weak and strong interactions and even gravitation. Many of these speculations would require energies beyond our wildest dreams to test experimentally, but one is of great importance in Brookhaven's plans for the near future. This is the intermediate vector boson. The theory of the weak and electromagnetic interaction, which he called Quantum Flavor Dynamics, requires the existence of a boson which transmits the weak force responsible for beta-decay, neutrino scattering, etc. The mass is expected to be between 50 GeV/c<sup>2</sup> and 100 GeV/c<sup>2</sup>, and he emphasized, should be readily produced by relatively inexpensive storage rings that could be constructed quite soon. The ISABELLE project proposed by Brookhaven is just the sort of facility he is referring to.

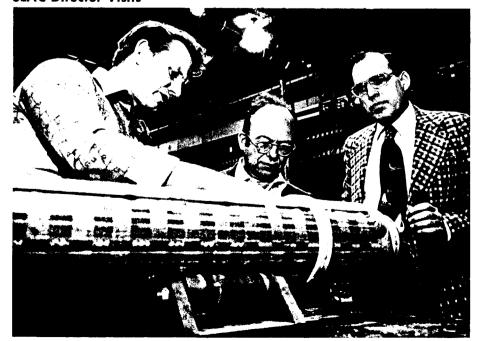
In addition to his talks, he spent considerable time consulting with members of our staff, visitors from Stony Brook, and AGS users.



In the Physics Seminar room at the start of the Gell-Mann lectures were: (from left) Physics Department Chairman Nicholas Samios, Laboratory Director George Vineyard, Nobel Laureate Murray Gell-Mann, Brookhaven Distinguished Lecturer in Physics for 1976, and Laurence Trueman, group leader, High Energy Theory group.

— photo by Rosen

# SLAC Director Visits



Dr. Wolfgang Panofsky (center), Director of the Stanford Linear Accelerator Center, visited the Lab on November 10. Here he discusses the ISABELLE program with Al McInturff (left), head of the dipole magnet project and Mark Barton, Chairman of the Accelerator Department. Dr. Panofsky also gave a talk to the staff on his recent trip to China.

# Their Way

You've heard it often – the wail of an ambulance siren. It is a distress signal notifying all before it that a sick or injured person is being taken to a hospital where dedicated people will do everything possible to restore the patient to good health.

A good number of Long Island hospitals are part of the United Way community. At present, 18 non-profit hospitals in Nassau and Suffolk are affiliated with this federation. In these hospitals, many volunteers contribute their time and skill to ease the load of the doctors and nurses.

Assisting in the emergency room at one of the United Way hospitals – Mather Memorial – are two BNL employees, Don Gilzinger on Wednesday evenings and Dick Skelton on Fridays. Many other BNL night-time volunteers can also be seen elsewhere at Mather and at other area hospitals.

For over three years Dick and Don have seen quite a few BNLers come through with minor and serious injuries who were glad to see a familiar face. "Being a part of the community is a real plus," say Don. "We can sympathize and reassure the patient and his or her family perhaps better than the professional staff because we are members of the community." Adds Dick, "Ninety-nine percent of the arrivals have never been in an emergency room before, and it can be a frightening experience, par-

ticularly for the little ones."

Don admits he gravitates toward the children. They arrive with swallowed coins, marbles, once a closed (fortunately) safety pin, cinnamon candies in the ears; and the most scared are those who suspect they'll need stitches. "I try to get them to talk about other things to calm them down," he says

Asked about a typical night on the job, both agreed that sometimes they're "bored stiff," but not very often. Usually they don't have a minute to sit down and frequently work well beyond their customary four hours, such as the night 14 firemen were brought in suffering from gas inhalation or when multiple-patient car accidents occur.

What do emergency room volunteers do? Replies Dick, "We take injury and medical information from the patient and family, do our best to reassure all concerned, transport patients to and from X-ray, deliver blood samples to the lab, wash instruments for sterilization, make beds,

(Continued on page 2)

# Swine Flu Shots

As we go to press, scheduling details of the swine flu vaccination program are not yet available. A memorandum to all employees will be issued on Monday advising them the time they are to report to the gym on November 30 for the shots.

# **United Way**

(Continued)

etc." Don sums it up: "We're gophers, orderlies, amateur psychologists... whatever's needed to free doctors and nurses for their primary functions."

Don's volunteer job has been made easier because he received extensive first aid training as an Air Force Navigator. But, like most volunteers, he received most of his training on the job, unlike Dick who has racked up all sorts of extra-curricular credentials.

On Tuesday evenings Dick teaches cardiopulmonary resuscitation (CPR) to the nurses at Mather – a course he has also given for the Heart Association. An emergency medical technician senior instructor for New York State, he trained BNL's firemen to become the first EMTs at the Lab. He is also an advanced medical technician instructor for Suffolk's paramedic mobile pre-hospital coronary care units and a Port Jefferson ambulance company volunteer.



Don Gilzinger (Accelerator Department) volunteers on Wednesday evenings at Mather Memorial Hospital.

Cafeteria Menu

Week Ending Nov. 26, 1976

Monday, November 22

Tuesday, November 23

Franks & Baked Beans

Cream of Chicken Soup

Wednesday, November 24

Fried Filet & 1 veg.

Pot Roast & 1 veg.

Thursday, November 25

Diners Note

Sunday November 28.

Friday, November 26

Split Pea Soup

Chopped Steak & 1 veg.

Barbecued Fresh Ham & 1 veg.

Chinese Pepper Steak on Rice

Snack Bar Service 9 a.m. to 2 p.m.

Snack Bar Service 9 a.m. to 2 p.m.

The Cafeteria will operate only the

Snack Bar Service from 9:00 a.m. until 2:00

p.m. daily over the Thanksgiving Holiday

weekend, Thursday November 25 through

The Center will be closed on Thursday,

Friday and Saturday, reopening at 5:00

Happy Turkey to All!

Tomato Bouillon



Dick Skelton (Medical Department) also volunteers his services at Mather on Friday evenings. —photos by Walton

And if that's not enough, he'll soon be pushing the "gun" at Port Jefferson area schools to inoculate students against swine flu. Dick's really a frustrated M.D. who regrets dropping out of school.

What motivates such dedication? To Don, "It's a way of helping, a way of alleviating someone else's misfortune. It's hard work, but it's satisfying although I don't think I do it just for self satisfaction." Dick likes to help people, too, but his primary reason relates to his teaching and dealing with emergency life support procedures on the outside. "You never know enough about injuries, and handling a person the wrong way at the scene can be very detrimental. The doctors and I have a good rapport, and I am constantly building on my knowledge from them."

Dick and Don and others like them at United Way hospitals are there when we need them. So are the services of 97 other affiliated agencies in our community.

Please give.

1.05

1.30

1.10

1.25

1.15

1.30

# Flutist And Pianist In Next BERA Concert

The next concert of the 1976-77 season will take place on Wednesday, December 8, at 8:30 p.m. in Berkner Hall. It will consist of a joint recital by two prominent young American artists, flutist Paula Robison and pianist Ruth Laredo.

Paula Robison, winner of the top prize in the Munich Competition and the only American flutist to win first prize in the Geneva International Competition, is rapidly becoming one of the most celebrated instrumentalists on the music scene today. Her engagements include appearances with the New York Philharmonic, the Orchestra de la Suisse Romande, the Louisville Symphony, Alexander Schneider's Chamber Orchestra and the Lincoln Center Music Society among others.

With a large repertoire encompassing music of all periods, Ms. Robison has just completed a recording for Vanguard of Romantic Flute Music. She has given New York Premieres of many contemporary works including Toru Takemitsu's "Voice" for solo flute in December, 1971, and "Fluting for Paula" by Leon Kirchner at Boston in August, 1973. This season she will perform Schubert's "Introduction and Variations" at Alice Tully Hall, the recording of which was named a "Recording of Special Merit" by Stereo Review.

As a recitalist, as guest artist with an increasing number of orchestras, as charter member of the prestigious Chamber Music



Flutist Paula Pohisan

Flutist Paula Robison

# Hear Ye! Hear Ye!

The time for Christmas has come near 'Tis time for us all to spread good cheer Singing is part of it Why not put your heart in it?

Why not put your heart in it?
All you must do

Is call 4512 And let me know you'll be there

Join the annual Christmas caroling; all are welcome.

- Bonnie McNair

# Arrivals & Departures

# Arrivals

Jeffrey H. Brateman	App. Science
Jack W. Davidoff	App. Science
David L. Hayslip	
Jan F. Herbst	
Leon Lawrence	Ph. & Gr. Arts
Arlene Mayo	Accelerator
Yoshihiko Mizumachi	Accelerator
Chee Tung	App. Science
Robert F. Wieser	App. Science
	••

# Departures

<del>-</del>	
Ellen K. Cobb	App. Math
Alan Schulhoff A	pp. Science

Society of Lincoln Center and the Orpheus Trio, the young Nashville-born flutist has received rave reviews wherever she goes.

Ruth Laredo needs little introduction to this audience. She gave a much acclaimed recital at BNL last season and was so pleased at her reception here that she promptly suggested the joint recital with Ms. Robison.

Born and raised in Detroit, Ruth Laredo studied with Rudolf Serkin at the Curtis Institute of Music, and made her New York orchestral debut with Leopold Stokowski and the American Symphony, whose 1976/77 season she will be opening. She has won wide recognition for her recordings of the complete Scriabin Sonatas and Preludes, as well as her recordings of



Ravel, which were prize-winners.

As an exclusive Columbia Records artist Ms. Laredo is currently recording the complete piano solo works of Sergei Rachmanioff. As soloist with major U.S. orchestras including the New York Philharmonic, the Cleveland Orchestra, the Detroit Symphony, the Boston Symphony, the Philadelphia Orchestra and the National Symphony, Ruth Laredo has achieved a reputation as one of today's foremost pianists.

The recital at BNL will feature works by Bach, Schubert, Rachmaninoff (piano solo), Franck and Leon Kirchner (flute solo).

#### Admission

regular	Ψ1.00
Students and persons over 65	2.00
Persons under 18	1.00

# Fire Protection Units

The BERA Board has made arrangements to offer BNL employees, at a very substantial saving, three sizes of Walter Kidde Company fire extinguishers, and a Guardion smoke detector.

All four units will be on display and orders will be taken starting on Monday, November 29 through Friday, December 3, from 11:30 a.m. to 1:30 p.m., at the Cafeteria.

#### Prices

Extinguishers:	
3% RPS-1, rated 10-BC	\$ 9.00
2% TPS-1, rated 1-A: 10-BC	\$10.00
6 TPS-1, rated 2-A:40-BC	\$15.00
Guardion Smoke Detector	<b>\$</b> 30.00

# I.B.E.W. Meeting

Local 2230, I.B.E.W. will hold its regular monthly meeting on Monday, November 29, 1976, at 8 p.m. in the Knights of Columbus Hall, Railroad Ave., Patchogue. There will also be an afternoon meeting at 2 p.m. for shift workers in the Union office at 31 Oak Street, Patchogue. On the agenda will be regular business, committee reports and the President's report.

# Foreign Press Visitors

p.m. on Sunday November 28.



A number of foreign journalists, particularly interested in energy conservation, visited the Laboratory on Tuesday. Checking in at Berkner Hall with Virginia Sayre, Visitor Tour Coordinator (at right) are: Flora Halzman (Brazil), Darrell Drucker (U.S. Information Agency) and Jiro Yokoyama (Japan).

— photos by Rosen

# **Revising Computer Language**



Bruce Martin, Applied Mathematics Department, welcomes members of the FORTRAN Standards Committee (ANSI Technical Committee X3J3), who have been meeting at Brookhaven all week to complete the forthcoming revision to the FORTRAN language standards.

Brookhaven Bulletin

# BROOKHINEN BULLETIN

Published weekly for the employees of

BROOKHAVEN NATIONAL LABORATORY

BERNICE PETERSEN, Editor DOUG HUMPHREY, Photo-Journalist CAROL PETRAITIS, Copy Preparation

40 Brookhaven Ave., Upton, N.Y. 11973 Telephone (516) 345-2345

CARL R. THIEN, Public Relations Officer

# In Print

"Boiling Liquid-Metal Heat Transfer," by Orrington E. Dwyer, has just been published by the American Nuclear Society, as the 13th monograph in the AEC-ERDA series on nuclear science and technology. The 450-page volume is the first in the series to be published by a BNL scientist. The book is written primarily for researchers, design engineers, and graduate students in nuclear chemical and mechanical engineering.

In this volume the technical status of boiling liquid-metal heat transfer is discussed by the author, who has reviewed the extensive world literature and referred to nearly 300 papers and reports of original research, most of which originated in the U.S.A. and the U.S.S.R. Dwyer has also drawn on the results of his own research in this field, which has been his primary concern for the last ten years. His many other published works in the field of liquid-metal heat transfer have been primarily in the area of forced convection.

Dwyer, who is currently a Guest Scientist in DAS, retired earlier this year as a Senior Scientist after 25 years with the Laboratory. He was formerly Head of the Chemical Engineering Division and Leader of the Heat Transfer Research Group.

# CREF Unit Values

# 1976

January	<b>\$4</b> 0.31	February	\$39.76
March	40.75	April	40.10
May	39.69	June	41.60
Julý	41.21	August	40.94
September	41.59	· ·	
	October	\$40.62	

October \$40.62

# Rambling Around

These are bits and pieces picked up from here and there with occasional observations by the Editor:

Perhaps it is time to start thinking of new names for our streets, names that are descriptive of the work of the Laboratory. Just for starters, here are a few to ponder:

Proton Place STEMstrasse

Energy Speedway
Charm Circle
Fusion Fairway
Plasma Artery

Half Life Road
Polymer Parkway
Magnet Mews
Neutrino Drive

Radioactive Way

If you have any further ideas, let us hear from you.

Over the centuries, people have been expressing themselves by writing on every available wall.

The following philosophical comments were culled from the book of Graffiti - Two Thousand Years of Wall Writing by Robert Reisner:

- The world is flat class of 1491
- Repeal the law of gravity
- Save water, bathe with friends
- There's too much water in our chlorine supply
- If you're pushing 50 that's exercise enough
- Life is a hereditary disease
- The world is coming to an end! Repent and return those library books!

### Tennis Champs

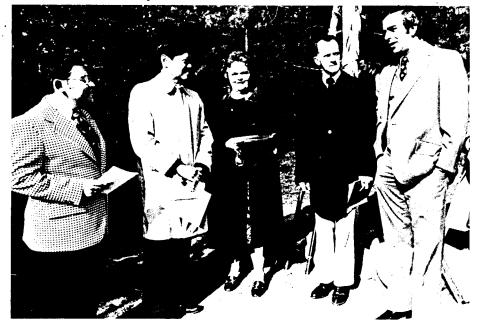


In their first year of competition, the BNL Men's Doubles Tennis team came away with the White League Championship for 1976 in a tournament sponsored by the Long Island Industrial Recreation Association. Some of the team members are shown above. Starting from the bottom (from left to right) are: S. Feldberg, L. Passell; K. Foley, J. Abata, A. Kevey; N. Bhagat, S. Takagi, F. Martin; S. Shapiro, R. Gibbs, T. Koetzle.

# 1977 BNL Holidays

New Year's Day	Friday	December 31 (1976)
Washington's Birthday	Monday	February 21
Memorial Day	Monday	May 30
Independence Day	Monday	July 4
Floating Holiday	Tuesday	July 5
Labor Day	Monday	September 5
Floating Holiday	Tuesday	September 6
Veteran's Day	Friday	November 11
Thanksgiving Day	Thursday	November 24
Day after Thanksgiving	Friday	November 25
Christmas Eve	Friday	December 23 (½ day)
Christmas Day	Monday	December 26

# **Bicentennial Time Capsule**



At ceremonies held recently by the Brookhaven Town Bicentennial Commission at Longwood Historical Park in Ridge, a time capsule was buried which will not be opened until July 4, 2076. The capsule contains letters from prominent persons and memorabilia from various organizations, and was made by the Process Technology Division of DAS. Participating in the ceremonies were: (from left) Meyer Steinberg, head of Process Technology, Nobel Prize winner Dr. Chen Ning Yang, Project Chairman Lucille S. Marinuzzi, Town Historian David A. Overton and Brookhaven Town Supervisor John F. Randolph.

### Notice

Because of the Thanksgiving holidays on November 25 and 26, the *Bulletin* will not be published next week.

# **Cooking Exchange**

Next Wednesday, November 24, the Cooking Exchange will present its annual Thanksgiving spectacular production.

This year, a mixture of Chinese and American dishes will be featured. There will be classic Chinese egg rolls, Cornish game hens stuffed with wild rice, broccoli with Hollandaise, molded cranberry salad, and, of course, the traditional dessert – pie.

We hope to see all you at the Recreation Building at 12:30 p.m. Bring yourself, 75¢ for tasting privileges, your children – babysitting provided at 25¢/child – and be prepared for a marvelous afternoon!

# New York City Trip

The next group railroad trip to New York City will be on Wednesday, December 1. Departure will be at 8:32 a.m. from the Patchogue LIRR Station. The round trip fare for adults is \$2.45, children under six years ride free. Any trip to Patchogue may be used for the return trip.

This would be a good opportunity to do some Christmas shopping and see the different holiday decorations around the city. Reserve a ticket by sending your fare through the U.S. mail to P.O. Box 322, Upton, New York, no later than November 22. Make checks payable to "Cash." Refunds will be made only if cancellations are received before noon on November 23.

# Sports News Bowling

Black & Blue League

The Hot Stuffs continue to lead the league but their margin has been cut down to 7½ points by the New Horizons. High games were Ed Sperry 257, Fred Hohmann 208, Colleen Holland 187, Debbie Antonio 169. High gross pots were won by Colleen Holland 252 and Fred Hohmann 236.

A reminder that there will be no bowling on November 24, the Wednesday before Thanksgiving.

Red League

Congrats this week to J. Connelly winning a club award with a 601 scratch series, including a 244 game. After nine weeks of bowling, the Red League is pretty well bunched-up and all teams still have a shot at the first half. High games for the night were R. Larsen 227/204, R. Jones 202, R. Meier 202, R. Wilson 202, J. Cain 201, J. Fontana 201, P. Klotz 200.

# Pink League

The Pinsplitters are still in first place ahead by seven. The Personnelities and Fiscal Assets are tied for second. The night belonged to Fran Scesny and Kay Hunt. Fran bowled a 205/489 series, her first. Well Joe, you said she would never be a bowler, but if I were you, I'd start moving my trophies out to make room for Fran's! Kay bowled a 203 for a 526 series earning the first gross award for a 676. Great bowling gals!

# Green League

The Sparks keep their lead of eleven as they took eight from the 76ers. J. Carroll had a 210 and G. Spira a 201. The Pick-Ups moved back into second place as they took eleven from the Freon Loaders. The Got-A-Hit-Ums managed to take eight from the Old Timers. The Blue Jays only got five from the Designers as H. Marshall had a 220 and M. Iarocci a 209. The Pinball Wizards took seven while the Super Cools only took four. The Charley Browns finally decided to make their move as they took eleven from the Bubble Boys. Phil Borzi had a 215/686 gross and J. Scott a 213.

# Pool Reopening Delayed

Extensive painting and other maintenance work makes it necessary to delay reopening the pool until Monday, November

Expiration date of season tickets has been extended through December 31.

# Classified Advertisements

#### **Placement Notices**

Each week the Personnel Office lists personnel placement requisitions, currently being processed. The purpose of these listings is, first, to give notice of all non-scientific staff positions being filled and, second, to give employees an opportunity to request consideration for themselves through the Personnel Office. In filling vacancies, the Laboratory's objective is to give first consideration to present employees, as follows: employees within the immediate group having the vacancy, employees within the department or division, employees within the Laboratory as a

For further information regarding a placement notice, or to request consideration for an available position, contact Supervisor, Personnel Placement & Development, extension 2874 or 2882.

244. MATERIAL HANDLER - Performs a variety of laboring and manual tasks in stores operations such as moving, loading, unloading, sorting and storing of materials. May operate motorized equipment pertinent to stores operations. Keeps stores facilities in neat condition. Supply & Materiel Division.

245. TECHNICIAN - AAS degree or equivalent in electronic technology with at least two years applicable working experience to maintain and repair electronic, electro-mechanical and radiation monitoring instruments. Safety & Environmental Protection Division.

246. SENIOR PERSONNEL REPRESENTATIVE - Seeking versatile and resourceful individual with 4-6 years' diversified experience in personnel placement. Background should include a Bachelor's Degree or equivalent with emphasis in oral and written communications and human relations. A demonstrable record of achievement in the total recruitment process including responsibility for the evaluation and selection of professional engineering, scientific, administrative and technical support personnel is required. Personnel Division.

247. SECRETARY - Temporary part-time position. Department of Applied Science.

248. TECHNICIAN - AAS degree or equivalent in electrical technology with experience in the fabrication, installation and testing of analogue and digital circuitry. Experience in printed circuit board layout, wire wrap technique and wire list preparation for automatic assembly desirable. Accelerator Dept.

249. COMPUTER SCIENCE ANALYST - BS degree or equivalent in computer science for user services groups. Familiarity with Control Data computers and operating systems. Applied Mathematics Department.

250. MATHEMATICS ASSOCIATE - Seeking BS or MS degree in engineering, physics, mathematics or computer science with working knowledge of ANSI FOR-TRAN. Background familiarity with numerical solution methods to engineering problems, preferably in the areas of hydraulics or nuclear reactor engineering. Compute programming, program documentation and support in analysis verification are expected. Department of Applied Science.

251, TECHNICIAN - AAS degree or equivalent in chemical technology and familiarity with mechanical testing procedures. Assignment involves sample preparation and testing for the evaluation of radioactive waste forms. Department of Applied Science.

252. OFFICE SERVICES ASSISTANT - Part-time position. Personnel Division.

253. TECHNICIAN - AAS degree or equivalent in electronics technology with experience in construction and troubleshooting of prototype analogue and digital equipment. Accelerator Department.

254. TECHNICIAN - AAS degree or equivalent in electro-mechanical or computer technology with working knowledge of CDC 405 card reader, 415 card punch, 607 tape drive and related controllers. Familiarity with CDC 1604 and 3600 logic desirable. Applied Mathematics Department.

255. TECHNICIAN - AAS degree or equivalent in mechanical technology with extensive knowledge of piping, wiring and instrumentation. Assignment involves assembly and operation of engineering scale systems involving hydrogen-metal reaction. Some laboratory mechanical testing experience and knowledge of handling low-level radioactivity desirable. Department of Applied Science.

256. OFFICE SERVICES ASSISTANT - Part-time tem-Redactron Word Processing Equipment. Photography & Graphic Arts Division

257. DESIGN ENGINEER - Seeking BSME/ChE or equivalent and extensive design experience on HFBR piping and associated mechanical equipment. Mechanical Engineering Division.

258. PAINTER B - Two positions. Plant Engineering Division. (This is a promotion for two employees in the Paint Shop.)

259. BIOLOGY ASSOCIATE - Bachelor's degree or equivalent in biology with experience in tissue culture. Assignment involves fractionation of cells and the isolation and purification of enzymes from bacteria, plant and mammalian media. Biology Dept.

260. COMPUTER SCIENCE ANALYST - BS degree or equivalent in computer science. Position involves maintenance of medical data bank and assistance in programming to other members of the Biomedical and Environmental Assessment Division, Department of Applied Science.

# **Autos & Auto Supplies**

2 SNOW TIRES - G78-15 Uniroyal winter patrol, used one season. Ext. 2932.

73 SUZUKI - TS 250, road-n-trail, 2100 mi, excel cond. \$500 steal. Pat, 286-3341.

VW SNOW TIRES - (2) H78-15 fiberglass & studded Goodrich Silvertown trailmakers, good cond. \$30 for pair. Ext. 2492, 475-8658 after 6.

4 WHEELS & HUB CAPS - For '76 Dodge van, near new. \$5/set. Ext. 2492, 475-8658 after 6.

RENT A RUIN - W/right of return in case of repair. '69 Cadillac Sedan deVille. Ext. 3267, 473-2594.

70 FORD MAVERICK - Std shift, 6 cyl, runs well. \$750.

Marion, Ext. 2903, Jerry, 281-5667. 67 JEEP WAGONEER - 4 wheel drive, r&h, good running cond. 583-5981.

69 BUICK LE SABRE - 45,000 orig mi, 4 dr, hdtp, vinyl roof, ps/pb/ac, new battery, trailer hitch, extra wheels w/snows. \$800. Chuck, Ext. 4481.

73 DODGE POLARA - 4 dr, vinyl hdtp, ac/pb/ps, r&h, excel cond. 45,000 mi. \$2000. Chuck, Ext. 3910. 68 FORD PICKUP - 8' bed. Asking \$600. Tommy, Ext.

2 SNOW TIRES - Cooper D78-14, used 1 season, excel cond. \$25.751-1588.

14" RIM - 5-hole. \$5. Tony, Ext. 3658.

72 FORD CAPRI - 2000 cc, 4 spd, sports interior w/ black vinyl roof, less than 50,000 mi, new winter tires. 281-0945.

64 CAMPER - Well equipped. \$700. Pat, 924-8766.

66 PLYMOUTH VALIANT - New tires & muffler system, runs very well. 732-8241.

70 AUSTIN AMERICA 1300 - Runs, needs tuneup, have extra tires, 2 reg & 2 snows on rims. \$150 as is.

SNOW TIRE - 650-13 w/rim. \$15. 744-5871.

70 MGB - 49,000 mi, 2 tops, WME wheels, overdrive, am/fm 8-track stereo, Jensen speakers, excel. Asking \$1900. 929-4173, 929-6686.

75 CHEVROLET - Impala station wagon, 20,000 mi, r&h, ac, 6 passenger, radial tires. 325-1855.

69 VW BEETLE - 4 spd, good running cond, body dented. \$375. J. Davis, Ext. 4504, 473-1523.

2 SNOW TIRES - 735x14 on Dodge rims, good cond. \$20, 727-0552

73 CHEVY VEGA GT - Custom interior, 4 spd, radial tires. \$1400. Steve, Ext. 3822, 929-6527.

70 BMW 2002 - 4 spd, high mi, but in good shape. Asking \$1700. Ext. 4492, 286-0384.

4 FIRESTONE TIRES - 950x16.5, 8 ply, on aluminum rims. \$325. David, 281-8458.

64 DODGE DART - 4 dr, auto, ps/well maintained, cheap transportation. \$150. T. Morris, 744-5096.

68 FORD WAGON - 307 V8, automatic, ps, excel mech cond, clean interior, needs body work, best offer. 727-7304.

CAR RADIO - Ford push button type. \$10 firm. E. Rogers, Ext. 4028.

2 RIMS - 14" mounted w/F78 snow tires, good for Dodge or Plymouth. \$20/pr. Joe Disparit, Ext. 3284 noon, 281-8943 after 6.

67 VW CAMPER - Wood interior, 51,000 mi, good cond. 928-4922.

TIRES - Recaps & used, most sizes, extra rims available. Ken, 289-8212, no Lab calls.

70 PONTIAC BONNEVILLE - 2 dr auto, ps/pb/pw/p trunk new steel belted radials, excel interior & exterior, \$850 firm. Joan, Ext. 4393, 399-2084.

DUNLOP SNOWS - 1 pair, 8:25x14 on Chrysler rims. Chuck, Ext. 3512.

67 DODGE DART - 6 cyl, auto, ps/pb, 77,500 mi, good cond, avail mid Dec. \$475. Ext. 2372.

69 HONDA - 750 cc K-O custom motorcycle, black/ chrome, excel cond, low mi, extras, must sell. \$1500, or best offer. Ed, Ext. 4485, 231-7529.

CAR TOP CARRIER - \$6.50. 653-6584.

# **Boats & Marine Supplies**

16' ELTRO - Plywood w/35 hp Evinrude elec start + trailer. \$325. Walt K, Ext. 4514.

ANTIQUE JOHNSON - 5 hp outboard motor, make offer. Randy, Ext. 3502, 878-8968.

BOSTON WHALER - Sailing, 9%' dinghy, fiberglass, oars, sail rig. \$575. 472-0570.

65 CHRIS CRAFT - Cavalier, 27', new heads & mani-

# Miscellaneous

folds. Phil, 727-0842 after 5.

TWIN BED - W/box spring. \$25. Andy, Ext. 4497, 744-5592.

KODAK PROJECTOR - For Kodak pocket camera slides, tray, lens, carry case, all new. \$45. Fred, Ext. 4613.

SHOT GUN - Remington 1100 semi-auto, 12 ga, 28 in fortified barrel, good cond. \$130. 475-4792. MEN'S SKI BOOTS - Humanic, 11M, mint cond. \$30.

WELL JET PUMP - & 1 hp 200 volt motor, gauges & pressure switches, excel cond. \$60. Walter, 878-

STROLLER - Folding Taylor, canopy, second seat, car seat, \$15 for both. Ext. 3379.

ROOF SHINGLES - Black, 3 square, Bird Architectural

Mark II. 286-1253 eves. TWIN BED SET - Men's dresser, women's dresser w/ mirror, 1 walnut men's chest of drawers. 727-4515.

CASETTE TAPE RECORDER - \$18; ac adaptor, \$5; am/ fm radio, \$10. Tudor, Ext. 4147 after 5, Ext. 3200. 73 ARGOSY 22' TRAILER - Fully equipped, excel

cond. Chuck, Ext. 3910. PAJAMAS - Dr. Denton, size 6 mo - 7 yrs. \$3 & \$4;

children's misc clothing, new. 732-2664.

BELT SANDER - Craftsman, 2 spd, 4" w/built in dust collector 1½ hp, new \$80, asking \$50; 5 shelf steel utility unit, \$5. 473-7460.

FREE - 1 male kitten, save from the pound, very peppy, needs a home. 472-1735.

GE REFRIGERATOR - 1 door, good second refrig, all trays, etc, excel running cond. \$25. 289-0399.

73 SUZUKI - TM 125, moto-cross #520, new front 3.50 tire & seat kick start, excel. Tim, 744-9408.

FIGURE SKATES - Black leather, men's sizes 2 & 3, Canadian Sheffield steel blades, excel cond. \$8 each. Olness, Ext. 4570, 751-2655.

BUNK BEDS - Bookcase, hardwood, maple finish, good used cond. Ext. 4570, 751-2655.

SANDING BELTS - 3"x23¾", 40, 80, 120 grit, 47 belts. \$40. Walt Chornoma, Ext. 3254.

OAK DRESSER - Antique w/mirror, refinished, \$85; old oak clothes tree refinished, \$25; antique mission oak chair w/cushion seat. \$25. 363-6597.

POOL TABLE - Child's on legs 44", orig carton elec games, football & baseball, will sell separately or \$15 for all. 744-3069.

TOOL CHEST - Sears 7-drawer, brand new, \$50; 18" height gauge, 18" venier caliper, small granite surface plate. 581-5827.

WINTER COAT - New black Borgana w/gray trim. 16. \$90. Jeanne Weber, Ext. 2003, 472-0086 after 4. MTD MULCHER SHREDDER - 5 hp Tecumsch eng & catch bag. \$150. Ext. 2023, 281-2767 after 6.

POLAROID CAMERA - Big shot portrait camera, \$8; also square shooter w/timer, \$10. Frank, 281-9269.

WINDOWS - Used double hung, \$15 ea (1) 36"x56", (1) 36"x39"; wooden interior door & frame, \$25. Bill, Ext. 2022.

26" GIRL'S BIKE - 3 spd, \$45; habitrail, hamsters, Ig & sm cages, \$7.50; SCM Marchant desk calculator, \$25. Ext. 4082, Ron, 289-1003.

FREE - Puppies looking for a home, 7 weeks old, mixed breed. Ext. 2238.

COFFEE MACHINE - Elec drip, \$8; 16 lb bowling ball w/bag, \$10; tire, mounted 7.00-13, \$10. Jim Lynch, Ext. 4510.

BEAGLE PUPS - AKC reg, 1 male, 1 female, 8 wks old. \$65. 661-6086 after 6.

ICE SKATES - Franklin figure, men's size 9, \$12; hockey skates, size 8, \$7. Howard, Ext. 2043.

CASPECO LENS - 400 mm, Pentax screw mount w/ case. \$50. 744-0296.

FORMAL GOWN - Light blue, sleeveless w/short sleeved jacket, suitable for maternity, size 7. \$20. 744-0296.

SEWING MACH - Vogue sitch, all attachments, portable case, needs tension adjustment. \$50.744-0269. DART BOARD - Sports craft, deluxe, 2 sets darts. \$18. Howard, Ext. 2043.

GIRL'S RAIN SHINE COAT - Size 8, navy blue w/ wihte stitching, zip-out lining, fine cond. \$10. 286-8805 eves.

SHOT GUN - 10 ga 3%" magnum double barrel w/ 18 boxes of shells. \$225. C. Nielson, Ext. 3954.

SHOES - Men's 9M, Hush Puppies, \$12, new men's shirts, brown, 15-33, \$3; white, 15-34, \$2; green, 15, \$2.50. Ext. 3609.

COAT - Size 12, melon, \$8; blue blazer, size 12, \$4; rabbit fur coat, \$30. Ext. 3609.

CARTOON PAINTING - \$2; business signs, etc. 744-

LIGHT FIXTURE - \$3; plant hangers, 2/\$3; drafting table light, \$18. 744-5871.

COAT - Size 14, \$8; brown jeans, 32-30, \$5. 744-5871.

YARD SALE - Montauk Hwy & Old Stump Rd, Brookhaven. Sat, Nov 20.

Ads left out of this issue because of lack of space need not

# be re-submitted in order to run in next week's issue

# Real Estate

Real Estate advertised for sale or for rent is available without regard for the race, color, creed or national origin of the applicant.

# For Sale

LAKE PANAMOKA - Corner ranch, 3 bedrm, att garage, 5 appl. deeded lake rights, mid 30's. 475-7500, 929-6753.

MILLER PLACE - 3 bedrm ranch, full basement, Ig living rm, 1½ car garage, 16x32 in ground pool, near schools & shopping. 473-7460.

CLEARWATER BEACH - Building plot, near Gardiner's Bay, E Hampton Township, 100x150, walk to priv beach, marina rights. \$13,500. Steve, Ext. 3469, 281-

SETAUKET - 4 bedrm colonial, 21/2 baths, fireplace, finished basement, Ig back patio, s/s, all appl, carpeting, must see. 751-8918 after 5:30.

PATCHOGUE - Roe Blvd area, 3 bedrm ranch on deep plot, wood shingles, fireplace, bay window, full basement, garage, deck. \$43,000. 331-1718.

SHOREHAM - 4 bedrm contemporary, large fireplace, spacious windows, many birch & dogwoods, 34 acre, balcony/water view, beach rights. \$65,000. 744-2268 after 5:30.

CENTER MORICHES - 3 bedrm split, fireplace, 35x14 family rm, country kitchen, 1½ baths, basement, garage, w/w carpet, s/s, boat & beach rights, must relocate, must be seen. \$38,500. 878-2513.

E PATCHOGUE - 4 lg bedrm, living rm, fireplace, formal dining rm, lg kitchen, 2 baths, 2-car garage, closed porch, s/s, ac, 160x237 partially wooded lot.

#### For Rent

PATCHOGUE - 2 bedrm, kitchen, living rm, bath, couple preferred, no pets, near Great South Bay, private. \$250/month including heat. Walt, Ext. 2907, 698-0576

VERMONT VACATION - 3 bedrm mobile home w/fp, located 10 acres, 10 min from Okemo Mt, close prox to 7 other ski areas, avail weekly or weekends. 473-8186 after 6.

BROOKHAVEN HAMLET - Apt in older country home, lg living rm, kitchenette, bedrm, bath, furnished, util incl. mature adults preferred. 286-0129.

VERMONT - Ski Bromley, Magic, Stratton, x-country ski on grounds, furn chalet, stone fireplace, weekend, weekly & share season rates. 757-5599.

MILLER PLACE PARK - Furn house to share, vacancy for one individual. \$120/month + util & security. Ext. 4405.

WADING RIVER - 2½ rm furn apt, beautifully decorated, all new, w/w carpet, priv entrance, util incl. SHIRLEY - 3 bedrm house on waterfront, fireplace.

(212)631-3348. VERMONT CAPE - 3 bedrm, fully equipped, fp, ski Bromley, Stratton or 26 mi of x-country trails in

backyard, weeks, weekends. 732-6499 after 6. APT SUBLET - \$247/month, can move in by Dec 1.

FURN RM - Bellport area, priv entrance & bath, limited kitchen priv, linens provided, util incl. \$150/ month or make offer. 286-1688.

2 STORY APT - Complete furn, priv entrance, modern kitchen & extra storage space, prime location, util incl, working couple or single preferred. 286-2450, 7:30 - 9 am or 6 - 7 pm, Box 277, Brookhaven NY 11719.

CORAM - 2 bedrm unfurn apt w/6 month or 1 yr lease. \$275/month incl heat. D. Sidhu, Ext. 3856, 698-

CHALET - Brand new, near Lake Wallenpaupack in Poconos, skiing, snowmobiling, etc. Rent week, month, season. 289-2159.

CORAM - New 4 bedrm house, furn, all appl, avail Jan 15 - Sept 1977. Ext. 3792.

#### Wanted

ARCHERY OUTFIT - For young hunter, prefer Compound bow. Bob, Ext. 3309.

BROWNIE UNIFORM - Size 7-8, reasonable. Joan, Ext. 4393, 399-2084. PUPPIES - For adoption, 7 weeks old, mixed small

breed, Joan, Ext. 4393, 399-2084. MEDIEVAL FIGHTER - Want name of person who joined Fred Hollander in medieval fighting, near gym

before Fred left Lab. Janet, Ext. 2345. PAPER MATCH BOOKS - Please save them, immedi-

ate pickup. Fred & Liz, Ext. 4613. HOME - For a kindly black female cat, spayed. Randy, Ext. 3502, 878-8968.

HUNTING PUPPY - To adopt & train, prefer springer spaniel, beagle or lab. AKC not important. 281-7763. 2 SNOWS - Or regular tires for a VW bug, must be

in very good cond. Ext. 2062. HOME - For a 4-year-old husky-mix dog. Ext. 2871,

286-2267 eves. FILE CABINET - Elec typewriter, chain saw, gener-

BABYSITTER - For day care of 3 month infant, 8:30 -5, 2 or 3 days/wk starting Dec. Prefer on site. 878-

A FEMALE - We have formed an excel volleyball team, we need one female player, if you have seen a volleyball before, please give us a call. We need

#### you. Debu, Ext. 2633, Carol, Ext. 2345. Lost & Found

LOST - Mercury hubcap on Tues night, 11/9, corner of Penn St & Brookhaven Ave. Josh Kopp, Ext. 3778.

FOUND - 1 Mustang hubcap, one I can't identify, on Cornell Ave, near Bldg 901. Josh Kopp, Ext. 3778.

# Services

EXPERIENCED TRIO - Don't be caught without a Gstring, trio has open dates avail, weddings, Christmas parties our specialty. Bill, 732-9102.

FISHERMAN - Do you want your catch deliciously smoked? 821-0761. TREE REMOVAL - Chain saw work, exp, free esti-

mates, hauling, stump removal, cordwood. Ken, 289-RELIABLE BABYSITTING - Weekdays from 2 pm to 10

pm, weekends, anytime, Mastic/Shirley areas. Nor-

een, 281-7873.

CABLE ASSEMBLIES - Made to spec. 586-1177. WILL BABYSIT - Exp mother in my home, playmate. 289-0161.

**ELECTROLUX OWNERS - Have your cleaner tested** for suction & power, free of charge, also sales & service. 475-8456.

TYPING - Manuscripts, technical, papers, theses, etc. Ext. 2939. EXPERT TYPIST - To do technical papers, manuscripts:

& theses, etc. Pat Fox, Ext. 2939. TUTORING - In my home, expert in math, French,

German, \$10/hr. 941-4328. TIRES - All sizes and types, all new. 281-5563.

QUALIFIED TEACHER - Requires work w/children under 10 yrs, anything considered. Ext. 3097.

BLACKTOP - Paving & sealing. Bob, 475-4382.

HEMMING & ALTERATIONS - 878-2591.